

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (currently amended): In a code division multiple access (CDMA) system that receives a plurality of data signals distinguished by codes, a method comprising:

(a) constructing a system response matrix using all possible codes and channel responses associated with their codes;

(b) based on the constructed matrix, performing ~~N~~ a plurality of soft symbol estimates for ~~the first N~~ symbols of each of the possible codes, the soft symbol estimates being used to perform a blind code detection (BCD) code energy measurement;

(c) determining received codes based on the ~~N~~ soft symbol estimates ~~for the first N symbols of each of the possible codes, determining received codes;~~ and

(d) extracting data from the matrix associated with the received codes.

2. (original): The method of claim 1 wherein the step of extracting data is performed using a multi-user detector (MUD).

3. (currently amended): The method of claim 2 further comprising:

(e) passing the ~~N~~ soft symbol estimates to the MUD, wherein the MUD does not repeat the computation of ~~N~~ soft symbols of each received code.

4. (currently amended): The method of claim 1 further comprising:

(e) ~~(f)~~ marking codes in the constructed matrix that have not been received by the system as being invalid; and

(f) ~~(g)~~ marking codes in the constructed matrix that have been received by the system as being valid, wherein the invalid codes are not used to extract data from the matrix for performing the processing of the data.

Claim 5 (canceled)

6. (currently amended): The method of claim 1 wherein the  $N$  soft symbol estimates are used ~~for performing an end-of DTX~~ to perform a discontinuous transmission (DTX) detection code energy measurement.

7. (currently amended): The method of claim 1 wherein the  $N$  soft symbol estimates are based on whitening matched filter (WMF) outputs.

8. (currently amended): In a wireless transmit/receive unit (WTRU) that receives a plurality of data signals distinguished by codes, a method comprising:

(a) constructing a system response matrix using all possible codes and channel responses associated with their codes;

(b) based on the constructed matrix, performing  $N$  a plurality of soft symbol estimates for ~~the first  $N$  symbols of each of the possible codes,~~ the soft symbol estimates being used to perform a blind code detection (BCD) code energy measurement;

(c) determining received codes based on the  $N$  soft symbol estimates ~~for the first  $N$  symbols of each of the possible codes,~~ determining received codes; and

(d) extracting data from the matrix associated with the received codes.

9. (original): The method of claim 8 wherein the step of extracting data is performed using a multi-user detector (MUD).

10. (currently amended): The method of claim 9 further comprising:

(e) passing the  $N$  soft symbol estimates to the MUD, wherein the MUD does not repeat the computation of  $N$  soft symbols of each received code.

11. (currently amended): The method of claim 8 further comprising:

(e) ~~(f)~~ marking codes in the constructed matrix that have not been received by the WTRU as being invalid; and

(f) ~~(g)~~ marking codes in the constructed matrix that have been received by the WTRU as being valid, wherein the invalid codes are not used to extract data from the matrix for performing the processing of the data.

Claim 12 (canceled)

13. (currently amended): The method of claim 8 wherein the  $N$  soft symbol estimates are used ~~for performing an end-of-DTX~~ to perform a discontinuous transmission (DTX) detection code energy measurement.

14. (currently amended): The method of claim 8 wherein the  $N$  soft symbol estimates are based on whitening matched filter (WMF) outputs.

15. (currently amended): A wireless transmit/receive unit (WTRU) that receives a plurality of data signals distinguished by codes, the WTRU comprising:

(a) means for constructing a system response matrix using all possible codes and channel responses associated with their codes;

(b) means for performing  $N$  a plurality of soft symbol estimates for ~~the first  $N$~~  symbols of each of the possible codes based on the constructed matrix, the soft symbol estimates being used to perform a blind code detection (BCD) code energy measurement;

(c) means for determining received codes based on the  $N$  soft symbol estimates ~~for the first  $N$  symbols of each of the possible codes;~~ and

(d) means for extracting data from the matrix associated with the received codes.

16. (original): The WTRU of claim 15 wherein the means for extracting data is a multi-user detector (MUD).

17. (currently amended): The WTRU of claim 16 further comprising:

(e) means for passing the  $N$  soft symbol estimates to the MUD, wherein the MUD does not repeat the computation of  $N$  soft symbols of each received code.

18. (currently amended): The WTRU of claim 15 further comprising:

(e) ~~(f)~~ means for marking codes in the constructed matrix that have not been received by the WTRU as being invalid; and

(f) ~~(g)~~ means for marking codes in the constructed matrix that have been received by the WTRU as being valid, wherein the invalid codes are not used to extract data from the matrix ~~for performing the processing of the data.~~

Claim 19 (canceled)

20. (currently amended): The WTRU of claim 15 wherein the  $N$  soft symbol estimates are used ~~for performing an end of DTX~~ to perform a discontinuous transmission (DTX) detection code energy measurement.

21. (currently amended): The WTRU of claim 15 wherein the  $N$  soft symbol estimates are based on whitening matched filter (WMF) outputs.

22. (currently amended): A wireless transmit/receive unit (WTRU) that receives a plurality of data signals distinguished by codes, the WTRU comprising:

(a) a device for constructing a system response matrix using all possible codes and channel responses associated with their codes;

(b) a whitening match filter (WMF) for performing  $N$  a plurality of soft symbol estimates for ~~the first  $N$  symbols of each of the possible codes~~ based on the constructed matrix, the soft symbol estimates being used to perform a blind code detection (BCD) code energy measurement, wherein received codes are based on the  $N$  soft symbol estimates ~~for the first  $N$  symbols of each of the possible codes~~; and

(c) a multi-user detector (MUD) for extracting data from the matrix associated with the received codes, wherein the WMF passes the  $N$  soft symbol estimates to the MUD, and wherein the MUD does not repeat the computation of  $N$  soft symbols of each received code.

23. (currently amended): The WTRU of claim 22 wherein codes in the constructed matrix that have not been received by the WTRU are marked as being invalid ~~and are not used for performing the processing of the data~~, and codes in the constructed matrix that have been received by the WTRU are marked as being valid.

24. (currently amended): An integrated circuit (IC) that receives a plurality of data signals distinguished by codes, the IC comprising:

(a) means for constructing a system response matrix using all possible codes and channel responses associated with their codes;

(b) means for performing ~~N~~ a plurality of soft symbol estimates for ~~the first N~~ symbols of each of the possible codes based on the constructed matrix, the soft symbol estimates being used to perform a blind code detection (BCD) code energy measurement;

(c) means for determining received codes based on the ~~N~~ soft symbol estimates ~~for the first N symbols of each of the possible codes~~; and

(d) means for extracting data from the matrix associated with the received codes.

25. (original): The IC of claim 24 wherein the means for extracting data is a multi-user detector (MUD).

26. (currently amended): The IC of claim 25 further comprising:

(e) means for passing the ~~N~~ soft symbol estimates to the MUD, wherein the MUD does not repeat the computation of ~~N~~ soft symbols of each received code.

27. (currently amended): The IC of claim 24 further comprising:

(e) ~~(f)~~ means for marking codes in the constructed matrix that have not been received by the IC as being invalid; and

(f) ~~(g)~~ means for marking codes in the constructed matrix that have been received by the IC as being valid, wherein the invalid codes are not used to extract data from the matrix for performing the processing of the data.

Claim 28 (canceled)

29. (currently amended): The IC of claim 24 wherein the  $N$  soft symbol estimates are used ~~for performing an end-of DTX~~ to perform a discontinuous transmission (DTX) detection code energy measurement.

30. (currently amended): The IC of claim 24 wherein the  $N$  soft symbol estimates are based on whitening matched filter (WMF) outputs.

31. (currently amended): An integrated circuit (IC) that receives a plurality of data signals distinguished by codes, the IC comprising:

(a) a device for constructing a system response matrix using all possible codes and channel responses associated with their codes;

(b) a whitening match filter (WMF) for performing  $N$  a plurality of soft symbol estimates for ~~the first  $N$  symbols of each of the possible codes~~ based on the constructed matrix, the soft symbol estimates being used to perform a blind code detection (BCD) code energy measurement, wherein received codes are based on the  $N$  soft symbol estimates ~~for the first  $N$  symbols of each of the possible codes~~; and

(c) a multi-user detector (MUD) for extracting data from the matrix associated with the received codes, wherein the WMF passes the  $N$  soft symbol estimates to the MUD, and wherein the MUD does not repeat the computation of  $N$  soft symbols of each received code.

32. (currently amended): The IC of claim 31 wherein codes in the constructed matrix that have not been received by the IC are marked as being invalid ~~and are not used for performing the processing of the data~~, and codes in the constructed matrix that have been received by the IC are marked as being valid.

33. (new): In a code division multiple access (CDMA) system that receives a plurality of data signals distinguished by codes, a method comprising:

- (a) constructing a system response matrix using all possible codes and channel responses associated with their codes;
- (b) based on the constructed matrix, performing a plurality of soft symbol estimates for symbols of each of the possible codes;
- (c) determining received codes based on the soft symbol estimates;
- (d) providing a multi-user detector (MUD) to extract data from the matrix associated with the received codes; and
- (e) passing the soft symbol estimates to the MUD, wherein the MUD does not repeat the computation of soft symbols of each received code.

34. (new): In a code division multiple access (CDMA) system that receives a plurality of data signals distinguished by codes, a method comprising:

- (a) constructing a system response matrix using all possible codes and channel responses associated with their codes;
- (b) based on the constructed matrix, performing a plurality of soft symbol estimates for symbols of each of the possible codes;
- (c) determining received codes based on the soft symbol estimates;
- (d) extracting data from the matrix associated with the received codes;
- (e) marking codes in the constructed matrix that have not been received by the system as being invalid; and
- (f) marking codes in the constructed matrix that have been received by the system as being valid, wherein the invalid codes are not used to extract data from the matrix.



35. (new): In a code division multiple access (CDMA) system that receives a plurality of data signals distinguished by codes, a method comprising:

- (a) constructing a system response matrix using all possible codes and channel responses associated with their codes;
- (b) based on the constructed matrix, performing a plurality of soft symbol estimates for symbols of each of the possible codes, the soft symbol estimates being used to perform a discontinuous transmission (DTX) detection code energy measurement;
- (c) determining received codes based on the soft symbol estimates; and
- (d) extracting data from the matrix associated with the received codes.

36. (new): In a wireless transmit/receive unit (WTRU) that receives a plurality of data signals distinguished by codes, a method comprising:

- (a) constructing a system response matrix using all possible codes and channel responses associated with their codes;
- (b) based on the constructed matrix, performing a plurality of soft symbol estimates for symbols of each of the possible codes;
- (c) determining received codes based on the soft symbol estimates;
- (d) providing a multi-user detector (MUD) to extract data from the matrix associated with the received codes; and
- (e) passing the soft symbol estimates to the MUD, wherein the MUD does not repeat the computation of soft symbols of each received code.

37. (new): In a wireless transmit/receive unit (WTRU) that receives a plurality of data signals distinguished by codes, a method comprising:

- (a) constructing a system response matrix using all possible codes and channel responses associated with their codes;

- (b) based on the constructed matrix, performing a plurality of soft symbol estimates for symbols of each of the possible codes;
- (c) determining received codes based on the soft symbol estimates;
- (d) extracting data from the matrix associated with the received codes;
- (e) marking codes in the constructed matrix that have not been received as being invalid; and
- (f) marking codes in the constructed matrix that have been received as being valid, wherein the invalid codes are not used to extract data from the matrix.

38. (new): In a wireless transmit/receive unit (WTRU) that receives a plurality of data signals distinguished by codes, a method comprising:

- (a) constructing a system response matrix using all possible codes and channel responses associated with their codes;
- (b) based on the constructed matrix, performing a plurality of soft symbol estimates for symbols of each of the possible codes, the soft symbol estimates being used to perform a discontinuous transmission (DTX) detection code energy measurement;
- (c) determining received codes based on the soft symbol estimates; and
- (d) extracting data from the matrix associated with the received codes.

39. (new): A wireless transmit/receive unit (WTRU) that receives a plurality of data signals distinguished by codes, the WTRU comprising:

- (a) means for constructing a system response matrix using all possible codes and channel responses associated with their codes;
- (b) means for performing a plurality of soft symbol estimates for symbols of each of the possible codes based on the constructed matrix;

(c) means for determining received codes based on the soft symbol estimates;

(d) a multi-user detector (MUD) for extracting data from the matrix associated with the received codes; and

(e) means for passing the soft symbol estimates to the MUD, wherein the MUD does not repeat the computation of soft symbols of each received code.

40. (new): A wireless transmit/receive unit (WTRU) that receives a plurality of data signals distinguished by codes, the WTRU comprising:

(a) means for constructing a system response matrix using all possible codes and channel responses associated with their codes;

(b) means for performing a plurality of soft symbol estimates for symbols of each of the possible codes based on the constructed matrix;

(c) means for determining received codes based on the soft symbol estimates; and

(d) means for extracting data from the matrix associated with the received codes;

(e) means for marking codes in the constructed matrix that have not been received by the WTRU as being invalid; and

(f) means for marking codes in the constructed matrix that have been received by the WTRU as being valid, wherein the invalid codes are not used to extract data from the matrix.

41. (new): A wireless transmit/receive unit (WTRU) that receives a plurality of data signals distinguished by codes, the WTRU comprising:

(a) means for constructing a system response matrix using all possible codes and channel responses associated with their codes;

(b) means for performing a plurality of soft symbol estimates for symbols of each of the possible codes based on the constructed matrix, the soft symbol estimates being used to perform a discontinuous transmission (DTX) detection code energy measurement;

(c) means for determining received codes based on the soft symbol estimates; and

(d) means for extracting data from the matrix associated with the received codes.

42. (new): A wireless transmit/receive unit (WTRU) that receives a plurality of data signals distinguished by codes, the WTRU comprising:

(a) a device for constructing a system response matrix using all possible codes and channel responses associated with their codes; and

(b) a whitening match filter (WMF) for performing soft symbol estimates for symbols of each of the possible codes based on the constructed matrix, wherein codes in the constructed matrix that have not been received are marked as being invalid, and codes in the constructed matrix that have been received are marked as being valid.

43. (new): An integrated circuit (IC) that receives a plurality of data signals distinguished by codes, the IC comprising:

(a) means for constructing a system response matrix using all possible codes and channel responses associated with their codes;

(b) means for performing a plurality of soft symbol estimates for symbols of each of the possible codes based on the constructed matrix;

(c) means for determining received codes based on the soft symbol estimates;

(d) a multi-user detector (MUD) for extracting data from the matrix associated with the received codes; and

(e) means for passing the soft symbol estimates to the MUD, wherein the MUD does not repeat the computation of soft symbols of each received code.

44. (new): An integrated circuit (IC) that receives a plurality of data signals distinguished by codes, the IC comprising:

(a) means for constructing a system response matrix using all possible codes and channel responses associated with their codes;

(b) means for performing a plurality of soft symbol estimates for symbols of each of the possible codes based on the constructed matrix, the soft symbol estimates being used to perform a discontinuous transmission (DTX) detection code energy measurement;

(c) means for determining received codes based on the soft symbol estimates; and

(d) means for extracting data from the matrix associated with the received codes.

45. (new): An integrated circuit (IC) that receives a plurality of data signals distinguished by codes, the IC comprising:

(a) means for constructing a system response matrix using all possible codes and channel responses associated with their codes;

(b) means for performing a plurality of soft symbol estimates for symbols of each of the possible codes based on the constructed matrix;

(c) means for determining received codes based on the soft symbol estimates;

(d) means for extracting data from the matrix associated with the received codes;

(e) means for marking codes in the constructed matrix that have not been received as being invalid; and

(f) means for marking codes in the constructed matrix that have been received as being valid, wherein the invalid codes are not used to extract data from the matrix.

46. (new): An integrated circuit (IC) that receives a plurality of data signals distinguished by codes, the IC comprising:

(a) a device for constructing a system response matrix using all possible codes and channel responses associated with their codes; and

(b) a whitening match filter (WMF) for performing soft symbol estimates for symbols of each of the possible codes based on the constructed matrix, wherein codes in the constructed matrix that have not been received are marked as being invalid, and codes in the constructed matrix that have been received are marked as being valid.